

## CONTENTS

### Fetal Medicine

JAMES D. GOLDBERG, MD, *Special Editor*

---

#### 259 Fetal Medicine

LINDA HAWES CLEVER, MD

#### 259 Introduction

JAMES D. GOLDBERG, MD

*Dr Goldberg, the special editor for this issue, is Associate Professor of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, School of Medicine.*

#### 260 Amniocentesis and Chorionic Villus Sampling

LEE P. SHULMAN, MD, and SHERMAN ELIAS, MD

*From the Division of Reproductive Genetics, Department of Obstetrics and Gynecology, University of Tennessee, Memphis, College of Medicine.*

#### 269 Fetal Tissue Sampling—Indications, Techniques, Complications, and Experience With Sampling of Fetal Skin, Liver, and Muscle

CHRISTINE CADRIN, MD, and MITCHELL S. GOLBUS, MD

*From the Reproductive Genetics Unit, Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, School of Medicine.*

#### 273 Fetal Ultrasonography

SARA H. GARMEL, MD, and MARY E. D'ALTON, MD

*From the Department of Obstetrics and Gynecology, Division of Maternal-Fetal Medicine, New England Medical Center, Tufts University School of Medicine, Boston, Massachusetts.*

#### 286 Cardiac Ultrasonography in Structural Abnormalities and Arrhythmias—Recognition and Treatment

MICHAEL M. BROOK, MD; NORMAN H. SILVERMAN, MD, DSc(Med); and MARIA VILLEGAS

*From the Department of Pediatrics, Division of Pediatric Cardiology, University of California, San Francisco, School of Medicine.*

#### 301 Preimplantation Diagnosis

JAMES D. GOLDBERG, MD; MARY C. MARTIN, MD; ROGER V. LEBOWITZ, PhD; and ROGER A. PEDERSEN, PhD

*From the Department of Obstetrics, Gynecology and Reproductive Sciences, and Laboratory of Radiobiology and Environmental Health, University of California, San Francisco, School of Medicine.*

#### 308 Prenatal Diagnosis Using Fetal Cells From the Maternal Circulation

JANE CHUEH, MD, and MITCHELL S. GOLBUS, MD

*From the Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, School of Medicine.*

(Continued from Page 238)

### 312 Maternal Serum Screening for Neural Tube Defects and Fetal Chromosome Abnormalities

NANCY C. ROSE, MD, and MICHAEL T. MENNUTI, MD

*From the Department of Obstetrics and Gynecology, Divisions of Reproductive Genetics and Maternal-Fetal Medicine, University of Pennsylvania Medical Center, Philadelphia.*

### 318 Intrauterine Transfusion With Red Cells and Platelets

KENNETH J. MOISE, Jr, MD

*From the Department of Obstetrics and Gynecology, Division of Maternal-Fetal Medicine, Baylor College of Medicine, Houston, Texas.*

### 325 Fetal Drug Therapy

MARK I. EVANS, MD; PETER G. PRYDE, MD; AVIHAI REICHLER, MD; MORDECHAI BARDICEF, MD; and MARK P. JOHNSON, MD

*From the Division of Reproductive Genetics, Center for Fetal Diagnosis and Therapy, Departments of Obstetrics and Gynecology, Molecular Biology and Genetics, and Pathology, Hutzel Hospital and Wayne State University School of Medicine, Detroit, Michigan.*

### 333 Nonvascular Needle and Shunt Placements for Fetal Therapy

WOLFGANG HOLZGREVE, Drmed, and MARK I. EVANS, MD

*From the Zentrum für Frauenheilkunde, Westf Wilhelms-Universität Münster, Germany, and the Department of Obstetrics and Gynecology, Wayne State University School of Medicine, Detroit, Michigan.*

### 341 Fetal Surgery

MICHAEL R. HARRISON, MD

*From the Department of Surgery, Division of Pediatric Surgery, and the Fetal Treatment Center, University of California, San Francisco, School of Medicine.*

### 350 Scarless Skin Wound Repair in the Fetus

H. PETER LORENZ, MD, and N. SCOTT ADZICK, MD

*From the Departments of Surgery and Pediatrics, University of California, San Francisco, School of Medicine.*

### 356 Stem Cell Transplantation

KRISZTINA HAJDU, MD, and MITCHELL S. GOLBUS, MD

*From the Reproductive Genetics Unit, Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, School of Medicine.*

### 360 Cytogenetic Analysis in Prenatal Diagnosis

STEVEN A. SCHONBERG, PhD

*From the Department of Pediatrics, University of California, San Francisco, School of Medicine. Dr Schonberg is now with the Department of Laboratory Medicine and Pathology, Children's National Medical Center, Washington, DC.*

### 366 Prenatal Diagnosis and Significance of Fetal Infections

ALESSANDRO GHIDINI, MD, and LAUREN LYNCH, MD

*From the Department of Obstetrics, Gynecology and Reproductive Sciences, Division of Maternal-Fetal Medicine, Mount Sinai School of Medicine, New York, New York.*

### 374 Prenatal Diagnosis of Inherited Metabolic Diseases

RONY DIUKMAN, MD, and JAMES D. GOLDBERG, MD

*From the Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, School of Medicine.*

(Continued on Page 248)

(Continued from Page 240)

### 382 Clinical Teratology

ASHER ORNOY, MD, and JUDY ARNON, PhD

*From the Department of Anatomy and Embryology, Laboratory of Teratology, and the Jerusalem Institute of Child Development, Hebrew University-Hadassah Medical School, Jerusalem, Israel.*

### 391 Ethical Considerations in Prenatal Diagnosis

ELENA A. GATES, MD

*From the Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, School of Medicine.*

### 396 Ethical Issues in Recommending and Offering Fetal Therapy

FRANK A. CHERVENAK, MD, and LAURENCE B. McCULLOUGH, PhD

*From the Department of Obstetrics and Gynecology, Division of Maternal-Fetal Medicine, New York Hospital-Cornell Medical Center, New York, New York, and the Department of Medicine and Community Medicine, Center for Ethics, Medicine, and Public Issues, Baylor College of Medicine, Houston, Texas.*

### 400 Ethics of Fetal Tissue Transplantation

LEE M. SANDERS; LINDA GIUDICE, MD, PhD; and THOMAS A. RAFFIN, MD

*From the Stanford University Center for Biomedical Ethics, Stanford University School of Medicine, Stanford, California.*

---

## OTHER FEATURES

---

### 242 Continuing Medical Education Activities in California, Hawaii, and Nevada; Colorado; New Mexico; Utah; Washington; Wyoming

### 256 Instructions for Authors

### 257 Subscription Information

### 414 Classified Advertising

### 426 Western State Medical Associations' Meetings

---

*Cover design by Citadel Press. Interior illustration by Phoebe Gloeckner.*

---

- ★ Official Journal of the Alaska State Medical Association, the Arizona Medical Association, the California Medical Association, the Denver Medical Society, the Idaho Medical Association, the Nevada State Medical Association, the New Mexico Medical Society, the Utah Medical Association, the Washington State Medical Association, and the Wyoming Medical Society.
  - ★ Affiliated Clinical Investigation Societies: the Western Association of Physicians; the Western Society for Clinical Investigation; the Western Section, American Federation for Clinical Research; the Western Society for Pediatric Research; the Western Region, Society for Investigative Dermatology.
-